



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,540	09/24/2003	Alexander W. Harkness	NSD2003-006	5475

26353 7590 05/15/2006

WESTINGHOUSE ELECTRIC COMPANY, LLC
P.O. BOX 355
PITTSBURGH, PA 15230-0355

EXAMINER

GREENE, DANIEL LAWSON

ART UNIT	PAPER NUMBER
----------	--------------

3663

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/670,540	Applicant(s) HARKNESS ET AL.	
	Examiner Daniel L. Greene Jr.	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5-8, 10-13 is/are pending in the application.
 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/9/2006 has been entered.

The cancellation of claims 2-4 and 9 is noted.

Drawings

2. The objection to the drawings set forth in section 4 of the Office action mailed 6/14/2005 and maintained in section 1 of the Office action mailed 12/27/2005 is withdrawn as applicant has cancelled claims 2-4.

3. HOWEVER, the drawings filed 9/24/2003 are objected to for the reasons set forth in section 3 of the previous Office action mailed 6/14/2005 as failing to comply with 37 CFR 1.84(p)(4) because reference characters "74" and "70" have both been used to designate the lower end of the internal duct. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

a. Applicant's replacement Figures 1 and 4 received 3/9/2006 are **NOT acceptable** as Figures 1 and 4 introduce new matter.

b. There is no basis for putting the "support springs" in the indicated position, showing the support springs only extending to the left and indicating the "support springs" are **ONLY** narrow deformed lengths of the internal duct, as the "support springs" could presumably be located in any position and the specification does not specify the number of "springs" or that they are limited to only a narrow deformed length of the internal duct. In actuality, the specification page 5 lines 10-14 discloses "lower end 70 is preferably supported against the coil stack assemblies by **a resilient spring 74**, which **may be** a narrow deformed length of the internal duct 52" (emphasis added). This appears to indicate that the resilient spring **may be** something other than a narrow deformed length of the internal duct, such as a round spring, cylindrical spring, etc., that is, the specification does not limit the scope of the resilient spring to what applicant has depicted in replacement figures 1 and 4.

c. Applicant's amendment to the drawings appears to indicate that the duct is split in the area of the resilient spring allowing said resilient spring to jut out past the boundaries of the duct itself, however the specification discloses "a narrow deformed length of the internal duct" which does **NOT** connote any

break/split/perforation of the duct work, per se. The resilient springs may be elongated dimples made in the duct, which do not actually split or create openings in the duct itself.

d. It would appear that this objection could be overcome by amending the specification and Figures 1 and 4 to remove the indicia (74) from both the specification and the original Figures 1 and 4 as filed.

- 4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Specification

- 5. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure for the reasons set forth in section 3 of the previous Office action mailed 12/27/2005 which in turn refers back to section 6 of the previous Office action mailed 6/14/2005.**

The objection of section 6a and 6b of the previous Office action mailed 6/14/2005 is withdrawn, however the objection of sections 6c and 3 is maintained and incorporated herein by reference.

Applicant's arguments in section "Background" spanning pages 9 - 11 (of the remarks received 3/9/2006), regarding the section 3 of the previous Office action mailed 12/27/2005 and the section 6c (of the 6/14/2005 Office action) objections, are considered as supporting the Examiners contentions that there actually is no adequate description of how the instant invention is capable of performing ALL of the desired functions.

Again, although the references may set forth modifications to their own respective inventions, it is not seen wherein any of the references cited disclose how to specifically modify the Applicant's instant invention as claimed. Accordingly the references cannot properly be relied upon to set forth facts, which Applicant's specification itself must recite to be complete.

Applicant states, "Seismic support assemblies are not designed support the weight of the CRDM's " (page 10, first paragraph, second to last sentence). Claim 1 states, "an upper end supported by the seismic support platform". It is the Examiners position that the limitation "supported" does NOT connote the same meaning as "seismically supported". Interpreted broadly the limitation "an upper end supported by the seismic support platform" has the same meaning as "a lower end supported by the reactor pressure vessel", that is, that the seismic support platform is supporting the weight of the CRDMs.

Again, the language of claims 1, 5 and 11 specifically claim, "...each control rod drive mechanism including...an upper end **supported** by the seismic support platform". (Emphasis added)

See MPEP 2111.01, which states

While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims **must be interpreted as broadly as their terms reasonably allow**. In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)

Claim Rejections - 35 USC § 112

6. Claims 1, 5-6 and 10-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for the reasons set forth in section 5 above.

7. Claims 1, 5-6 and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 1, 5, 6 and 11 are vague, indefinite and incomplete as to what is meant and encompassed by the phrase "an upper end supported by the seismic support platform" for the reasons set forth in section 5 above.

b. Claims 1 and 5 are vague, indefinite and incomplete in what is meant and encompassed by the phrase "each duct extending from a lower end

disposed below the upper end of the lower shroud and in air flow communication with the lower shroud to an upper end" (Underlining added). The limitation "an upper end" does not connote any particular location per se, nor do the claims specifically require the "upper end" to be part of the internal duct itself. The limitation "an upper end" could be the upper end of the lower shroud or some other structure. Since the limitation "an upper end" is not specifically designated as a particular end of any particularly specific structure the metes and bounds of the claims are undefined.

c. Claim 6 is vague, indefinite and incomplete in what all is meant by and encompassed by the phrase "the internal ducts are supported by the upper plenum" because it is not clear whether the internal ducts are mechanically or physically supported or "supported" in the sense that the upper plenum supplies motive force for the air within said ducts. Since the term "supported" connotes two separate and distinct meanings and the claim fails to disclose a specific definition of the limitation the metes and bounds of the claim are undefined.

See MPEP 2111.01, which states

While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims **must be interpreted as broadly as their terms reasonably allow**. In re American Academy of Science Tech Center, F.3d, 2004 WL 1067528 (Fed. Cir. May 13, 2004)

d. Claim 6 is vague, indefinite and incomplete in what all is meant by and encompassed by the phrase "with the upper plenum supported by the upper leg

member and the seismic support platform supported by the lower leg member” because it appears that the lower leg member supports both. Accordingly the metes and bounds of the claim are undefined.

e. Claim 12 is vague, indefinite and incomplete in what all is meant by and encompassed by the limitation “L shape” because the claim does not specify whether it is a capital L, lower case L, foreign language L etc. Since the claim does not specifically disclose which L or how and in what manner the shape of the duct is supposed to coincide with the shape of the L, vertically, horizontal cross section, etc, the metes and bounds of the claim are undefined.

f. Claim 13 is vague, indefinite and incomplete in what all is meant by and encompassed by the limitation “rectangular shape” because the term rectangular does NOT connote any particular type of rectangle, per se, nor how and in what manner the duct has a rectangular shape, i.e. in the vertical direction, horizontal cross section, etc. Accordingly the metes and bounds of the claim are undefined.

Claim Rejections - 35 USC § 103

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

Art Unit: 3663

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1, 5 and 11 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3, 5, 10 and 17 of U.S. Patent No. 4,678,623 to Malandra et al. which is assigned to the current Assignee Westinghouse Electric Corp. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claimed invention is a species of the genus disclosed in said of U.S. Patent No. 4,678,623 as explained below:

Application 10/670,540 Claim 1	U.S. Patent 4,678,623 claim 17
a reactor pressure vessel closure head	a closure head
a seismic support platform	a seismic support platform
an array of Control Rod Drive Mechanisms	a plurality of control rod drive mechanisms (CRDMs) fixedly mounted within said closure head so as to project vertically upwardly above said closure head;
a lower shroud surrounding the electro-magnetic coil stack assemblies and having an upper end spaced from the seismic support platform in air flow communication with the atmosphere around the control	cooling baffle means

rod drive mechanisms;	
a plurality of internal ducts disposed between control rod drive mechanisms within the array of control rod drive mechanisms, each duct extending from a lower end disposed below the upper end of the lower shroud and in air flow communication with the lower shroud to an upper end;	duct means extending vertically upwardly from said lower air manifold, said vertically extending
an upper plenum disposed above the seismic support platform in air flow communication with the internal duct	exhaust fan means includes the fan and the plenum as shown in, for example, Fig 2
a missile shield assembly disposed within the upper plenum;	a missile shield plate
a plurality of fan assemblies disposed on the upper plenum in air flow communication with the upper plenum; and	exhaust fan means
lift legs connected with the reactor pressure vessel closure head and supporting the seismic support platform, the upper plenum and the missile shield assembly for removal of the head assembly as an integral assembly.	a plurality of lift rods fixedly secured to said closure head for enabling lifting and lowering of said closure head relative to said pressure vessel;

Malandra does not appear to specifically disclose that the exhaust ducts are “within” or “between” the CRDMs however the Malandra claims are generic in that they disclose “disposing vertically upwardly extending air exhaust ducts above said lower air manifold in such a manner that said air exhaust ducts are disposed within said peripheral envelope of said closure head;” Which is generic to and reads on applicant’s plurality of internal ducts disposed between control rod drive mechanisms within the array of control rod drive mechanisms. Malandra teaches it is old, advantageous and quite important to locate the cooling system components within the envelope of the closure head in order to not interfere with the tension bolt or hydraulic

Art Unit: 3663

tensioning apparatus or equipment in addition that no interference is presented with respect to other structural components within the containment area when the closure head is removed from the pressure vessel and moved to a storage position in column 8 lines 12-40. It appears the claims and specification of Malandra set forth motivation for placing the ducts ANYWHERE within the envelope of the closure head and should NOT be limited to only the periphery of said structure

Malandra does not appear to specifically recite that the missile shield is disposed "within" the upper plenum, however Figure 2 and claim 5 disclose that the fan plenums are fixedly secured to said missile shield. It is considered that in the interest of minimizing the combined weight of the integrated head assembly, that the least amount of material would be utilized consistent with codes and safety requirements. As such it is considered that the missile shield would be incorporated into the plenum design such that the missile shield acts as the bottom side or lower boundary of said plenum. Accordingly if the missile shield is the bottom of the plenum then it would be "within" the upper plenum. Applicant's claim language does not require the missile shield to be completely or totally within or encased by the plenum. Further, there is no novelty in rearranging where the missile shield is located as long as it is performing the same function as such is nothing more than a rearrangement of parts.

Note that MPEP 2144 states that a making separable, rearrangement of parts, duplication of parts and/or changing the shape does not make an invention patentably distinct. See *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961), *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *In re*

***Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975), *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)**

Malandra Figure 2 appears to indicate that the plenums may be discrete plenums not interconnected, however Figure 1 (prior art) clearly shows that those in the nuclear head assembly art are well aware that the upper plenum/manifold (24) could be one large plenum and such is nothing more than an obvious variant.

10. Claims 1, 5, 6 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,678,623 to Malandra et al. provided on applicant's IDS dated 9/24/2003 for the reasons set forth in section 13 of the 6/14/2005 Office action reproduced here below for applicant's benefit.

Malandra discloses a head assembly for a RPV, comprising:

- a RPV closure head (112);

- a seismic support platform (128) spaced from the closure head;

- an array of CRDMS (116), each CRDM including an electro-magnetic coil stack-assembly and having a lower end supported by the RPV and an upper end supported by the seismic support platform (column 1, lines 58-61);

- a lower shroud (118) surrounding the electro-magnetic coil stack assemblies and having an upper end spaced from the seismic support platform in airflow communication with the atmosphere around the CRDMS;

- a CRDM plenum (120) disposed between the closure head and the lower shroud (applicant's claim 11);

a plurality of ducts (136) surrounding the array of CRDMS, each duct extending from a lower end disposed in air flow communication with the lower shroud to an upper end extending through the seismic support platform (column 13, lines 11-13);

an upper plenum (162) disposed above the seismic support platform in air flow communication with the ducts;

a missile shield assembly (134) disposed within the upper plenum (wherein it is understood that according to Figure 2 the missile shield forms one side of the upper plenum and the external boundary of the missile shield reads on the boundaries of the plenum and therefore the missile shield is not only part of the plenum, but also within it);

a plurality of fan assemblies (126) disposed on the upper plenum in air flow communication with the upper plenum; and

lift legs (144) connected with the RPV closure head and supporting the seismic support platform, the upper plenum and the missile shield assembly for removal of the head assembly as an integral assembly in for example, figure 2, column 1, column 5 lines 7+ and column 6.

Malandra does not appear to specifically disclose that the exhaust ducts are "within" or "between" the CRDMs however the Malandra claims are generic in that they disclose "a method of retrofitting existing nuclear reactor facilities...comprising...disposing vertically upwardly extending air exhaust ducts above said lower air manifold in such a manner that said air exhaust ducts are

disposed within said peripheral envelope of said closure head;" (claim 1), which is generic to and reads on applicant's plurality of internal ducts disposed between control rod drive mechanisms within the array of control rod drive mechanisms. Malandra teaches it is old, advantageous and quite important to locate the cooling system components within the envelope of the closure head in order to not interfere with the tension bolt or hydraulic tensioning apparatus or equipment in addition that no interference is presented with respect to other structural components within the containment area when the closure head is removed from the pressure vessel and moved to a storage position in column 8 lines 12-40. It appears the claims and specification of Malandra set forth motivation for placing the ducts ANYWHERE within the envelope of the closure head and should NOT be limited to only the periphery of said structure

Again, Malandra teaches it is old, advantageous and quite important to locate the cooling system components within the envelope of the closure head in order to not interfere with the tension bolt or hydraulic tensioning apparatus or equipment in addition that no interference is presented with respect to other structural components within the containment area when the closure head is removed from the pressure vessel and moved to a storage position in column 8 lines 12-40.

If applicant is not of the opinion that Malandra teaches placing the ducts internal to the CRDMs then at the time of the invention it would have been obvious to one of ordinary skill in the art to relocate the ducts from the periphery

of the CRDMs to the internal spaces within the CRDMs for the benefits of providing additional space for maintenance of peripheral CRDMs, for utilizing tension bolt or hydraulic tensioning apparatus or equipment and in addition for providing additional clearance so that no interference is presented with respect to other structural components within the containment area when the closure head is removed from the pressure vessel and moved to a storage position as taught to be old and advantageous by Malandra.

Additionally it is pointed out that MPEP 2144 states that making separable, rearrangement of parts (such as interspersing the ducts within the CRDMs), duplication of parts and/or changing the shape does not make an invention patentably distinct. See *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961), *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975), *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

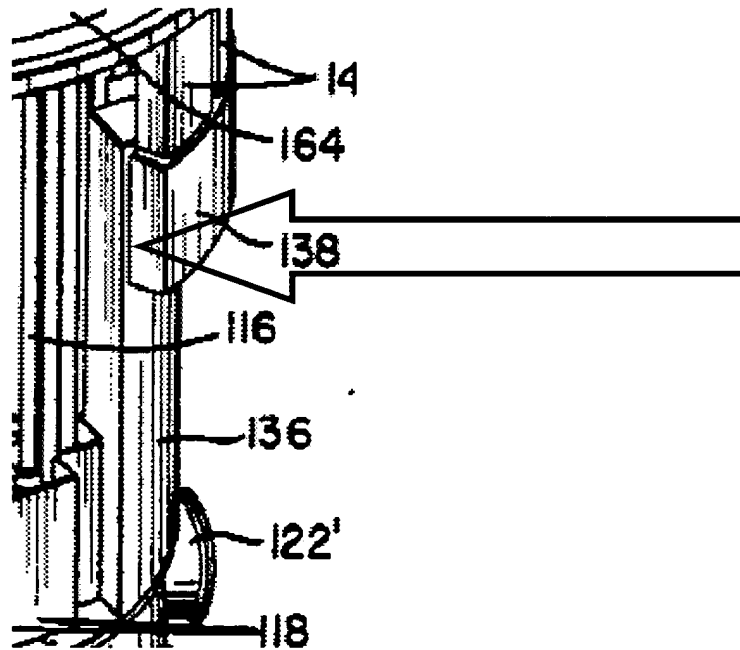
Claim 6 is further disclosed in, for example, column 7 lines 26-30, wherein it is understood that rearranging the air ducts to be internal, vice external is an obvious variant performing the same functions. Figure 2 indicates that the upper leg member is attached by both a nut assembly and a clevis assembly, Malandra further discloses the use of clevis assemblies in, for example column 6 lines 6-14 and 37-45. Further, Malandra column 9 lines 17-25 set forth the condition

Art Unit: 3663

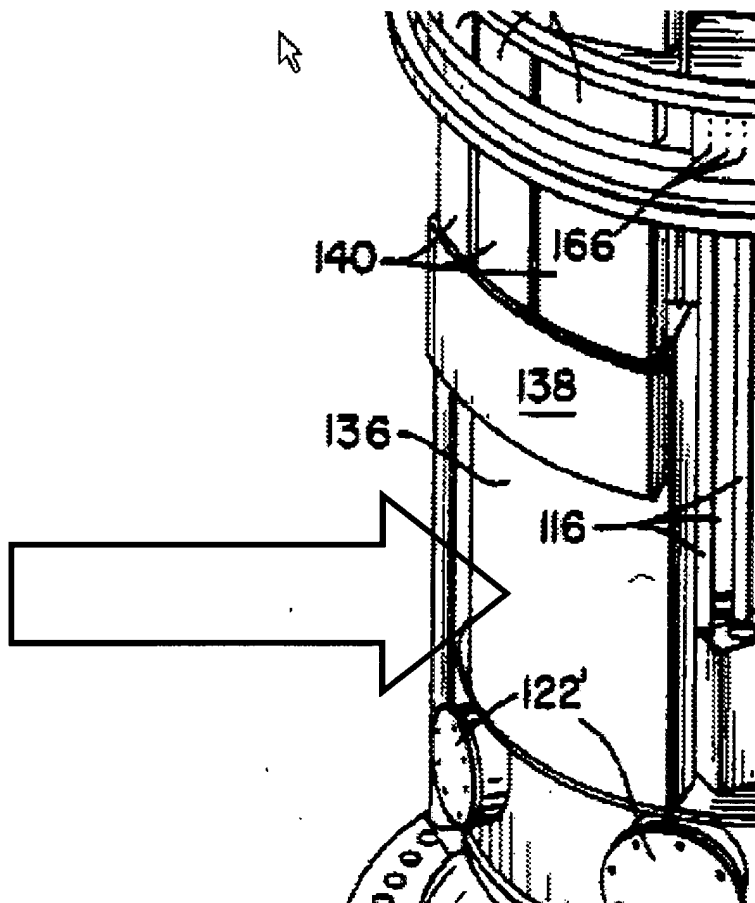
wherein the upper plenum will be supported by the upper leg members (156) with the seismic support supported by the lower leg members (column 6 lines 20-24).

Claim 10 is disclosed in the preamble of claim 1.

Claim 11 is disclosed in, for example Figure 2 wherein the ducts have an L shape in the vertical direction where item (136) joins with item (138) wherein it is understood that the term "duct" reads on the combination of all the parts that make up said duct.



Claim 12 is disclosed in, for example Figure 2 wherein the ducts have a rectangular shape when viewed from the side as they extend vertically from the lower air manifold to the fans.



Applicant's arguments filed 3/9/2006 have been fully considered but they are not persuasive. Applicant's arguments are unpersuasive because applicant has not shown that the references do not teach what the examiner has stated they teach, nor has applicant shown that the examiner's reasoning for and manner of combining the teachings of the references is improper or invalid.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the internal ducts extend up to an upper (fan) plenum located above the seismic support) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. Claims 1, 5, 6 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,678,623 to Malandra et al. as applied to claims 1, 5, 6 and 10-13 above and further in view of U.S. Patent 4,302,290 to Mazur et al.

Malandra discloses applicant's invention as explained above.

Malandra teaches it is old, advantageous and "quite important" to locate the cooling system components within the envelope of the closure head in order to not interfere with the tension bolt or hydraulic tensioning apparatus or equipment in addition that no interference is presented with respect to other structural components within the containment area when the closure head is removed from the pressure vessel and moved to a storage position in column 8 lines 12-40.

It would appear to be well within the knowledge to one of ordinary skill in the art to recognize that simply changing the location of the ducts is an obvious variant as Mazure et al. column 3 lines 1-25 clearly states "the function of the

ductwork...is to afford a means of funneling to the reactor vessel the cooling required in the course of conduct of the operation of the nuclear reactor housed within the reactor vessel". Clearly if it was determined that specific areas of the reactor vessel required additional cooling that additional ductwork/fans or redirection of current ductwork would be warranted.

Therefore it is further considered obvious to alter the locations and/or quantity of ductwork for the purpose of cooling the reactor vessel in the required manner, as taught by Mazur et al.

Again MPEP 2144 states that making separable, rearrangement of parts (such as interspersing the ducts within the CRDMs), duplication of parts and/or changing the shape does not make an invention patentably distinct. See *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961), *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975), *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

12. Claims 1, 5, 6 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over The Simplified Head Assembly article (hereinafter SHA) from Westinghouse World View December 2002 alone or further in view of U.S. Patent 4,302,290 to Mazur et al.

a. SHA discloses applicant's invention substantially as claimed including the missile shield being totally within the upper plenum. The limitation "internal duct"

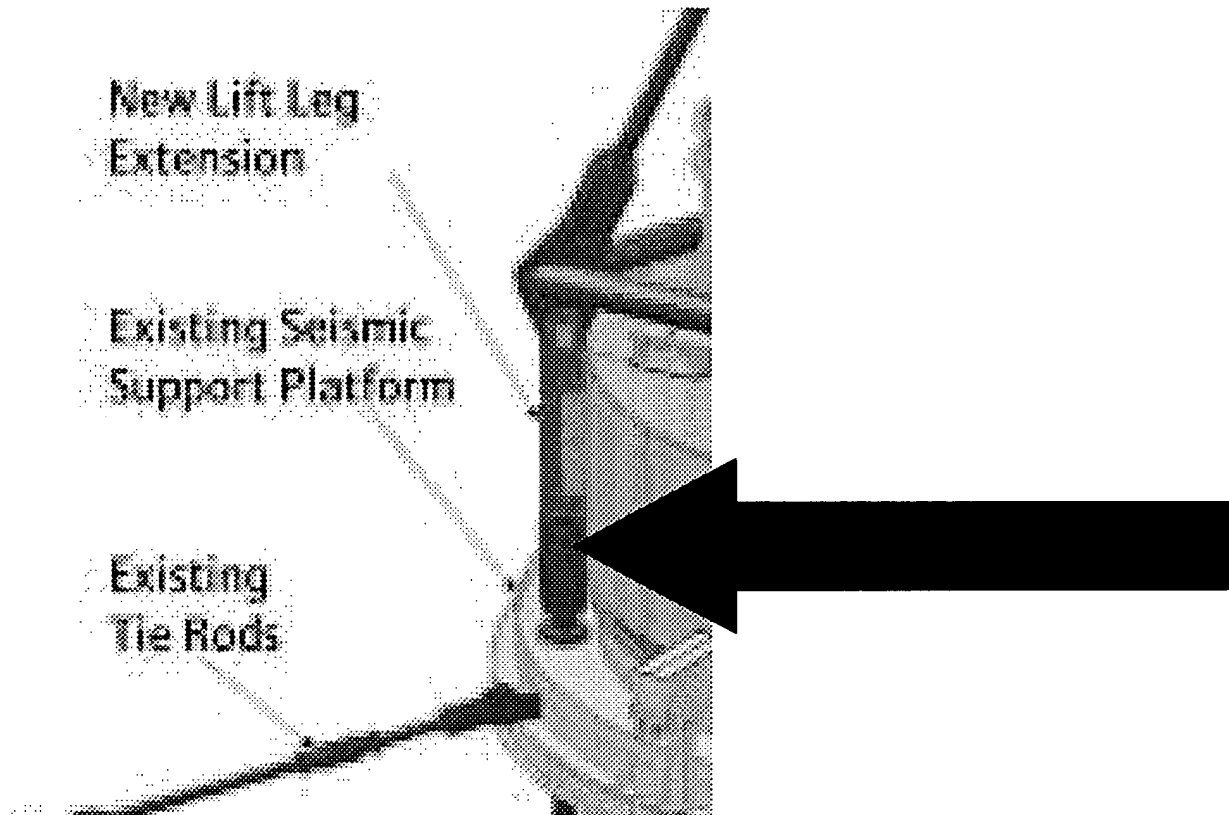
as broadly interpreted reads on the passageways within the “new upper shroud” that allow the air to flow there through.

b. If applicant is of the opinion that the internal air flow passageways do not read on the limitation “internal duct” then it would have been obvious to replace the upper shroud with internal ducts as Mazure et al. column 3 lines 1-25 clearly states “the function of the ductwork...is to afford a means of funneling to the reactor vessel the cooling required in the course of conduct of the operation of the nuclear reactor housed within the reactor vessel”. Clearly if it was determined that specific areas of the reactor vessel required additional cooling that additional ductwork/fans or redirection of current ductwork would be warranted.

Therefore it is further considered obvious to alter the locations and/or quantity of ductwork for the purpose of cooling the reactor vessel in the required manner, as taught by Mazur et al.

c. **Again MPEP 2144 states that making separable, rearrangement of parts (such as interspersing the ducts within the CRDMs), duplication of parts and/or changing the shape does not make an invention patentably distinct. See *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961), *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975), *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)**

- d. Claim 6 is disclosed on page 11



- e. Claim 10 is disclosed on page 11 ~~10~~.
- f. Claims 12 and 13 are disclosed on page 11 wherein the ducts have a rectangular shape in the vertical direction and an L shape in the horizontal cross section.

Conclusion

13. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully


Art Unit: 3663

consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L. Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIG 
2006-05-10


JACK KEITH
SUPERVISORY PATENT EXAMINER